



SystemC CCI WG

Simple Immutable Parameters

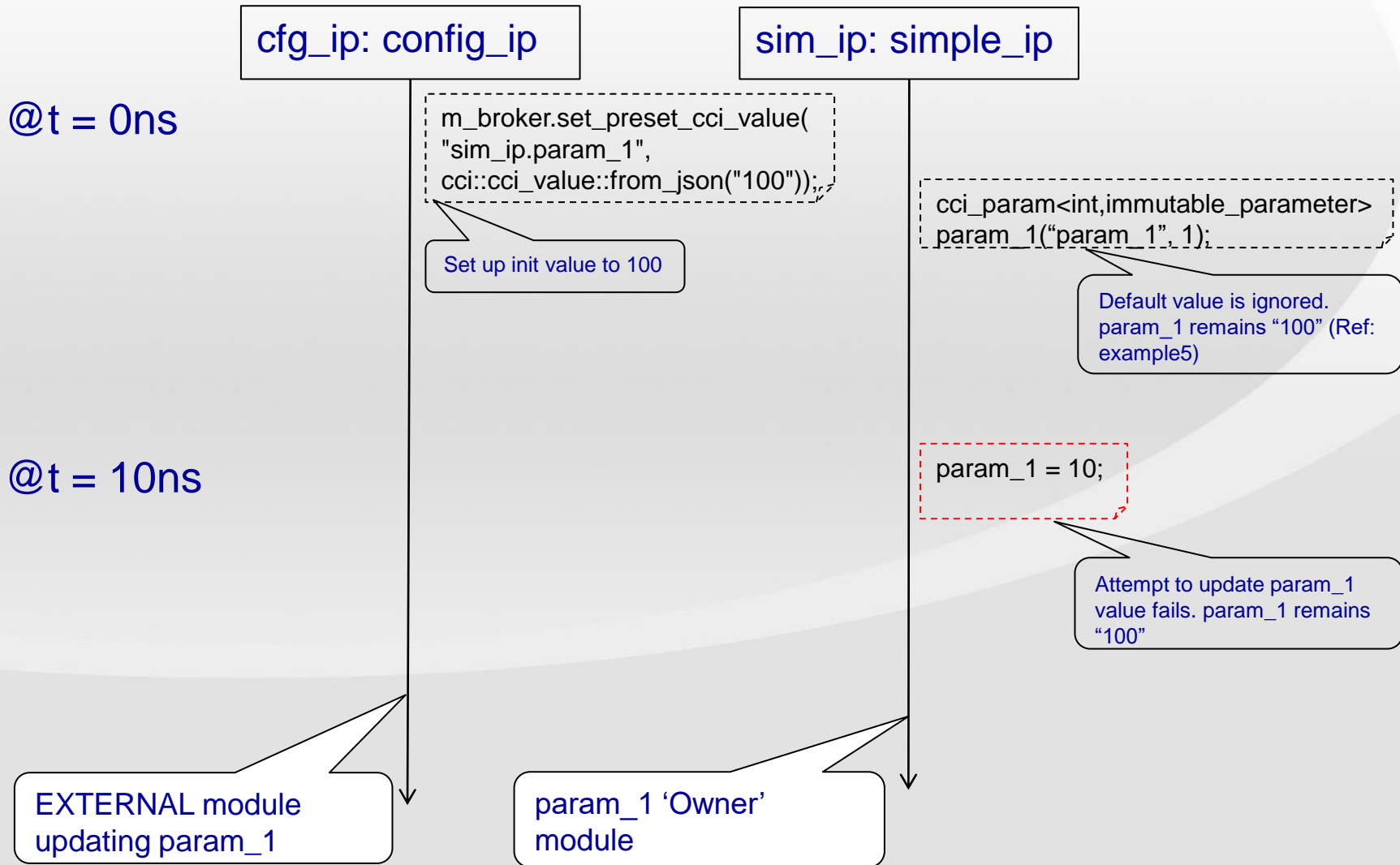
Vishal Goel, Texas Instruments Inc.
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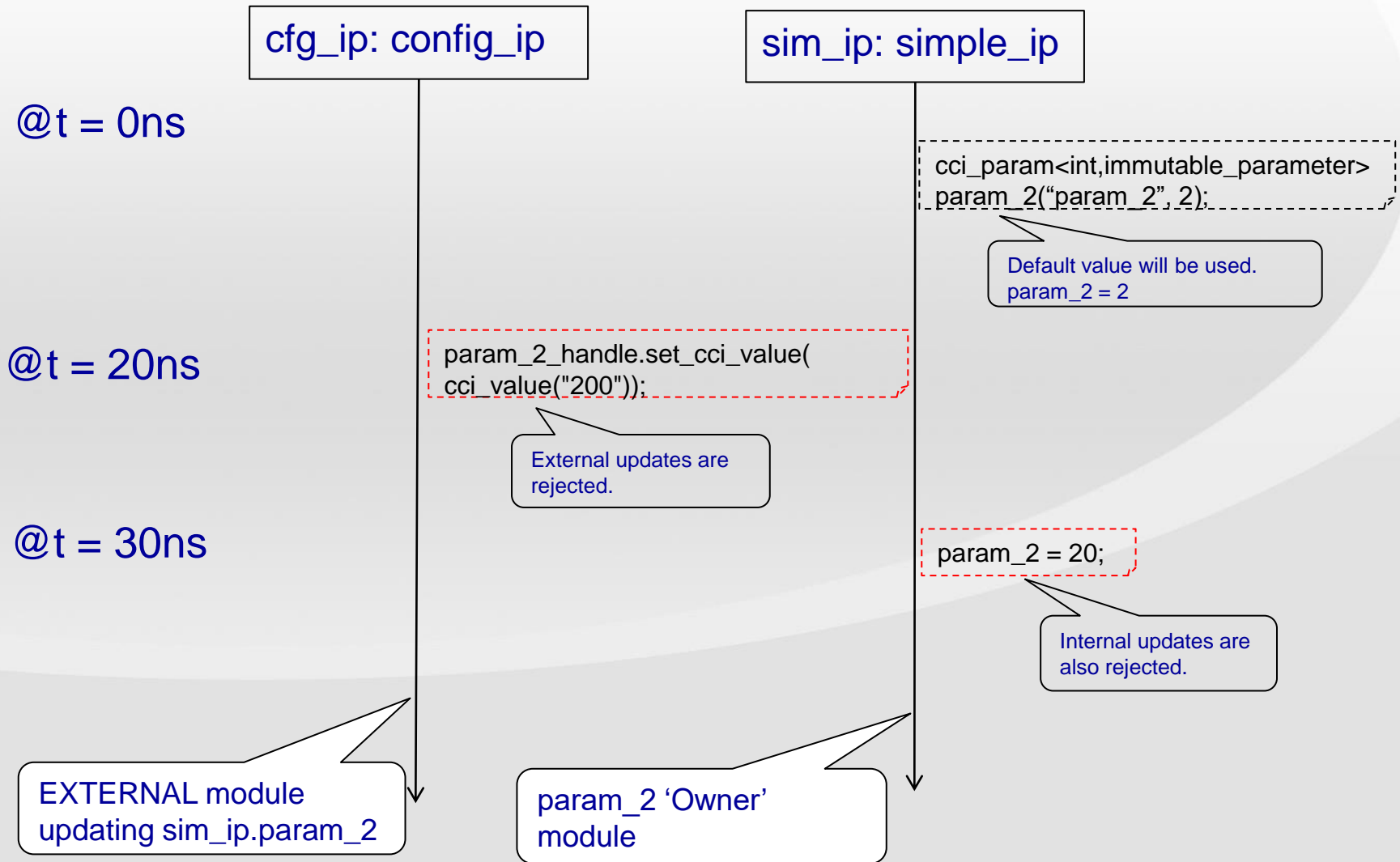
Simple Immutable Parameter

- **Demonstrate use of simple immutable parameters**
- **User module specifies variables as immutable**
- **Use Case 1:**
 - Define a parameter with default value
 - Once this value is set, any attempt to change the parameter at run time will fail.
- **Use Case 2**
 - Define an initial value for a parameter; before parameter construction.
 - This value will take precedence over default (constructor) value of the parameter; as well as; any attempt to change the parameter at run time will fail

Example Sequence Diagram (UC-1)



Example Sequence Diagram (UC-2)



Expected Output

(ex04_Simple_Immutable_param.log)

SystemC Simulation

Info: cfg_ip: @0 s, Attempting to setup config_ip to 100 before IP construction

Info: cfg_ip: @0 s, Set init-value of sim_ip.param_1 to 100

Info: sim_ip: @0 s, @Ctor: Default value specified for sim_ip.param_1 is 1

Info: sim_ip: @0 s, @Ctor: Default value specified for sim_ip.param_2 is 2

Info: sim_ip: @0 s, @Ctor: param_1 mutable type is immutable

Info: sim_ip: @0 s, @Ctor: param_2 mutable type is immutable

Info: sim_ip: Info: Ctor: immutable param:param_1 = 100 (expected)

Info: sim_ip: Info: Ctor: immutable param:param_2 = 2 (expected)

Info: sc_main: Begin Simulation

Info: sim_ip: @0 s, execute method is testing Use Case 1

Info: sim_ip: Info: @Run: param_1 = 100 (expected)

Info: sim_ip: @10 ns, @Run: Assign new value (10) to sim_ip.param_1

Error: /Accellera/CCI/SET_PARAM_FAILED: Parameter (sim_ip.param_1) is immutable.

In file: <removed by verify.pl>

In process: sim_ip.execute @ 10 ns

Info: sim_ip: Info: @Run: param_1 = 100 (expected)

Cont'd

Info: sim_ip: @10 ns, execute method is testing Use Case 2

Info: cfg_ip: @20 ns, Attempting to set value of 'sim_ip.param_2' to 200

Error: /Accellera/CCI/SET_PARAM_FAILED: Parameter (sim_ip.param_2) is immutable.

In file: <removed by verify.pl>

In process: cfg_ip.execute @ 20 ns

Info: sim_ip: Info: @Run: param_2 = 2 (expected)

Info: sim_ip: @30 ns, @Run: Assign new value (20) to sim_ip.param_2

Error: /Accellera/CCI/SET_PARAM_FAILED: Parameter (sim_ip.param_2) is immutable.

In file: <removed by verify.pl>

In process: sim_ip.execute @ 30 ns

Info: sim_ip: Info: @Run: param_2 = 2 (expected)

Info: sc_main: End Simulation